THE VETERINARY RECORD

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EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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THE SCHOOLS.

During the week after next, all our schools will re-open their doors. The dates of the opening meetings have already been advertised, and only vary very slightly—from September 29th to October 1st. The meeting at Camden Town is this year of special interest, for Sir John M'Fadyean, who will give the inaugural address, is just completing twenty-one years of service there. It was in 1892 that Prof. M'Fadyean made his first appearance at Camden Town and delivered the inaugural address as the newly-appointed Dean and Professor of Pathology and Bacteriology. Coming from Scotland with a great reputation, he was understood at that time to be the future Principal of the School, and the next occasion on which he delivered the inaugural address—in 1894—marked his actual accession to the Principalship. We all know how the College has developed in his hands since then, and there should be a good attendance of old pupils to see him attain his majority upon its staff.

AN INFECTING AGENT IN TUBERCULOSIS.

A possible agent in the spread of bovine tuberculosis was mentioned at the Midland Counties discussion, which we printed last week.

Water from collieries has not usually been regarded as a source of tuberculosis; but more than one speaker at the Midland meeting cast suspicion upon it; and the name of Prof. M'Call was mentioned in support of the idea. On the other hand, Mr. DeVine—an acknowledged authority—expressed doubt, not seeing how such water could contain tubercle bacilli.

It is not easy to understand how colliery water can be directly infective, unless at some portion of its course it is liable to infection from tuberculous colliers. But there is some clinical evidence indicating infectivity; and we should like to hear if more can be adduced. The point is of practical importance, apart from its scientific interest.

Indirectly it has some bearing upon the vexed question of the channel by which cattle usually become infected. It may prove to be an argument of some value in the old controversy of ingestion *versus* inhalation. Water has been justly credited with conveying infection in various diseases, and tuberculosis may be one of them.

FRACTURE OF THE CUNEIFORM MAGNUM.

I think the following case which recently came under my notice, and of which I send a short description, with two photographs taken shortly after the accident, may be of interest to your readers. I regret that the photographs are very indistinct as I was compelled to take them in a very bad light, and the movements of the horse would not permit of sufficient exposure, but hope you will be able to make some use of them.

Subject. A five-year-old bay Australian mare, about 15 hands, the property of H.M. the King of Siam.

History. The mare was being led back to her stable which is built on piles, and stands about four feet above the level of the ground. To enter the stable it was necessary for the mare to walk up the inclined boarding shown in the accompanying photograph. Whilst doing this she slipped and fell. Being unable to rise, temporary slings were erected and by this means she was raised to the standing position, when it was found she was unable to bear any weight on the off hind. The limb assumed an abnormal position, appearing longer than its fellow. The point of the toe rested on the ground, whilst there was excessive flexion of the hock and fetlock joints. When viewing the injured hock from either side, it had the appearance of a very pronounced curb.

On manipulation there was distinct crepitus and increased mobility evident in the hock joint; these

symptoms being particularly marked in movements of abduction and adduction of the metatarsus, but pain was not marked.

The following morning there was a moderate amount of hard swelling, chiefly confined to the inner and posterior aspects of the hock, and the mare was shot.

On post-mortem examination the cuneiform magnum was found to be completely fractured from anterior to posterior border in almost two equal parts.

H. G. Tabuteau-Herrick, M.R.C.V.S.

Royal Stables, Bangkok.

July 26th.

[The second photograph unfortunately would not "reproduce."].

ABSTRACTS FROM FOREIGN JOURNALS.

Hernia of the Point of the Cæcum in a Mule. —Radical Cure.

Auger records (*Journal de Méd. Vét. et de Zootechnie*) the case of a four-year-old mule which presented, towards the inferior third of the right flank and rather posteriorly situated, a soft depressible swelling the size of a child's head, which was easily returnable into the abdomen. Auger could easily make out the circumference of an almost circular hernia ring of about 10 to 12 centimetres (= 4 to 4¾ inches) in diameter. The diagnosis of ventral hernia was therefore established with facility, and was also supported by the history. The animal had been pastured amongst cattle, and had received a violent blow in the right flank from the horn of one of them about three months before.

Having thrown the animal, Auger found that the hernia was easily reducible; but after returning it to the abdomen the sac appeared thicker than normal. He decided to attempt radical cure by suture.

Twenty minutes before the operation the mule received an injection of morphia and atropine. He was thrown upon the left side, and then anæsthetised with chloroform.

Having taken antiseptic and aseptic precautions, Auger made two curved incisions, each about eight to ten inches long, meeting at the ends and isolating a piece of skin from 2 to 2½ inches broad over the hernia. He then separated this piece of skin from the sac, and removed it. Next he dissected the sac from the skin as far as the opening of the hernial ring. The sac appeared to be free from adhesions, although its walls were rather thick.

Auger then secured the sac with forceps, and made an incision from 1½ to 1¾ inch long in it. To his great surprise this incision opened into a pouch containing alimentary material, extending upwards into the abdomen, having a volume equal to that of the sac, and adhering to the latter throughout its extent. Considering the shape of this intestinal pouch, there could be no doubt that it was the point of the cæcum which had lodged in the hernial sac and become adherent to it.

The intestine was now separated from the sac and solidly sutured. The adhesions which the cæcum had formed were then broken down, and the hernia was returned into the abdomen.

The rupture in the abdominal wall was then closed by sutures, and a clamp of Marlot's pattern. Although the abdominal wall around the hernial ring was very thin, the results were excellent. The temperature never rose above the normal. At the end of twelve days the sutures and clamp were removed. By that time the cicatrisation of the muscles was perfect, but as some skin had undergone necrosis from the pressure of the clamp, a rather large cutaneous wound was left. This cicatrised in a month's time, and the cure was then complete.—*Annales de Méd. Vét.*

Varicose Tumour of the Vagina in a Mare.

Hartog records (*Tydschr. voor Veeartsenijkunde*) the case of an aged mare, some months pregnant, which frequently showed a hæmorrhagic discharge from the vulva. These repeated losses of blood had brought about a very pronounced anæmia.

Careful exploration of the vagina revealed the existence upon the roof of the vaginal wall, about six inches in front of the vulvar commissure, of a duplicature of mucous membrane which was hanging in the lumen of the vagina. At its base it had the dimensions of a two-franc piece.

A constant hæmorrhage was being produced from this place, and became accentuated at the moment of the vaginal exploration. It was possible to almost totally efface the tumour by compressing it with the finger, and when this was done the hæmorrhage ceased. These manipulations did not cause the least sign of pain. The blood presented the characters of venous blood. Hartog diagnosed a varix which had induced anæmia as a consequence of repeated losses of blood.

By means of a speculum, Hartog dilated the vagina sufficiently to enable him to apply a ligature to the base of the tumour. When this was accomplished the hæmorrhage immediately ceased, and the part compressed in the ligature came away at the end of seven days. The general condition of the mare improved rapidly, and the only after-treatment that Hartog adopted was the introduction of a capsule of bacillol into the vagina twice daily. —*Annales de Méd. Vét.*

W. R. C.

Report upon the Investigations of the Pectoral Form of Influenza of the Horse (Brustseuche) at the Royal Institute of Infectious Diseases.—Gaffky (*Ztschr. Veterinark.*, 24 (1912), Nos. 2, pp. 65—76, fig. 1; 3, pp. 113—122; abs. in *Rev. Gen. Méd. Vét.*, 20 (1912), No. 230, pp. 77—79).

This paper presents the results of bacteriological studies, investigations of the histogenesis of primary lesions, period of incubation, experimental inoculations of laboratory animals and horses, and the role of rats, mice, and insects in the transmission of the disease. In studies of 4,000 slides made from

523 fragments of various organs, the author failed to detect the presence of any causative organism. Sarcosporidia were frequently found in the diaphragm and intercostal muscles but were present in healthy as well as affected horses. Attempts to cultivate an organism ærobically and anærobically from the lung tissue, blood from the lungs, pleuritic exudate, spleen pulp, etc., on various media containing blood serum resulted negatively. Two colts, six months of age, were slaughtered on the 60th and 62nd hour respectively, after having ingested fæces and having been inoculated with discharges from the affected animals (with which they were placed in contact) with a view to determining the tissues first attacked; in one a pneumonic focus with pleuritic infiltration was present, in the other a simple localised pulmonary œdema. The intestinal wall of both animals was equally inflamed in places throughout its length. These investigations indicate a priority for the intestinal lesions, but further investigations are considered necessary in order to settle the question.

The incubation period was found to be about 30 days. Laboratory animals inoculated with, and fed upon various infected products, proved to be refractive, and similar results were obtained from six horses to which various products from infected animals, including intestinal contents and fragments of pulmonary tissue, were fed. In an attempt to determine their possible role in the transmission of the infection, horses were fed upon the droppings and bodies of rats and mice which had been kept in cages into which dung from affected horses was introduced almost daily for nearly a month, but with negative results. Transmission experiments with various insects and arachnids resulted negatively.

On the Etiology of the Pectoral Form of Influenza ("Maladie" Typhoide) of the Horse.—J. Lesage (*Bul. Soc. Méd. Vét.*, 89, (1912), No. 20, pp. 498—513).

The author thinks that the influenza of the horse is a diplococcic septicæmia, and that the diplococcus pneumo-enteritis equi of Galtier and Violet may be the causative organism.

Salvarsan and its Administration in the Pectoral form of Influenza in the Russian Army.—I. Gordsjalkowsky (Abst. in *Berlin Tier. Woch.*, 28 (1912), No. 39, pp. 720—721; *Amer. Vet. Rev.*, 42, (1912), No. 3, pp. 350—352.)

The satisfactory results following the administration of salvarsan subcutaneously in 23 preliminary cases, led to its use in the Russian Army in January, 1911. In order to determine its therapeutic effect when injected into the blood, experiments were carried on with 50 horses; in four cases the injections were made immediately after the detection of the disease, in 35 cases on the second day, and in three cases on the third and fourth days.

The temperature usually fell six or eight hours after administration, and after 48 hours was again normal, the inflammation of the lungs and pleura disappearing at the same time. A second administration was necessary in six cases, as the temperature rose again, after a period of from two to four days, to 104 F. These horses were first treated with 2 gm. of salvarsan, and the second time with 1 gm., which proved to be sufficient to insure complete recovery.

Other horses in which the symptoms were less severe, were given doses varying from 1 to 1·5 gm. In these cases, after a slight recovery, a partial relapse occurred which necessitated a repetition of the injection, whereupon a rapid recovery followed. In the one fatal case among the horses treated with salvarsan the temperature increased and reached 108 after four hours.

It is stated that the dose administered to young horses of 1100 lb. should not exceed 2 gm. It is recommended that the administration be made at the outset of the disease, using a solution in the proportion of 1 : 500, which should be administered intravenously.

On the Treatment of the Pectoral Form of Influenza (Brustseuche) of the Horse with Salvarsan. — Nevermann. (Berlin. *Tierarztl. Wchnschr.*, 28 (1912), No. 14, pp. 241-246).

Thirty-eight horses suffering from the pectoral form of influenza were treated with salvarsan, which was administered in 2 to 3gm. doses, intravenously in 27 cases and intramuscularly in 11 cases.

Two of the 27 animals to which the salvarsan was administered intravenously died; in one, death was either due to paralysis of the heart as direct result of an intoxication, or to an embolus; in the other case, to necrotic pneumonia. Ten of the other 25 cases to which the salvarsan was administered intravenously had a normal temperature within 24 hours, and the temperature of the remaining 15 had fallen more or less. In one case a second administration of the drug was necessary. In all cases a thoracic dulness was present at the time of treatment and in six of the fourteen remaining cases a dulness appeared during the further course of the disease.

In the 11 animals to which salvarsan was administered intramuscularly the beneficial influence of the drug on the further course of the disease was not so constant, since a thoracic dulness developed in five of the six animals in which it had not appeared at the time of treatment. The body temperature of these animals was not influenced by the treatment. See also a previous note. (E.S.R. 27, p. 289).

On Salvarsan in Treatment of the Pectoral Form of Influenza (Brustseuche) of the Horse. —Kettner. (Berlin, *Tier. Woch.*, 28 (1912). No. 26, pp. 855, 856).

This is a brief general review of the subject, in which the author calls attention to the beneficial results obtained from the use of this drug.

FORAGE POISON IN HORSES, CATTLE, AND MULES, SO-CALLED CEREBRO-SPINAL MENINGITIS AND COMMONLY TERMED "STAGGERS."—R. GRAHAM. (*Kentucky Sta. Bul.* 176, pp., 369-383, pls. 4).

An outbreak of forage poisoning traceable in a majority of cases to unsound corn, fodder, or fermented ensilage is said to have occurred in Kentucky during the fall and winter months of 1911-12, the heaviest loss being recorded in Kenton, Marion, Henderson, Boyle, Fayette, Warren, Scott, Mason, Marshall, Boone, Pulaski, Shelby, McCracken, Graves, Montgomery, Jefferson, and Fleming counties. Horses were attacked more than cattle, and cattle are more susceptible than mules.

The author states that the course of the disease was so varying that it may be described as occurring in two and perhaps three types, the acute or rapidly fatal; the subacute, which generally ends in death; and the chronic or milder form from which the animal under proper care and treatment may recover. It was often observed in cattle that the first animal affected in the herd died much sooner than the animals subsequently attacked. Some animals made a complete recovery from a mild or chronic form of disease only to succumb in a few days or a few weeks' time on a recontraction of the disease, showing that one attack confers no resistance to a second.

The acute form is said to have been more prevalent than any other, especially in horses and mules, the animals so affected succumbing in from two to three days from the time the first clinical symptoms were manifested. Animals were frequently found dead in the morning that evidenced no symptoms of ill-health on the previous day. Horses were attacked at work in the field and died within a few hours. It is stated that the peracute types of the disease have been mistaken for acute poisoning, numerous sample of stomach contents from such animals having been received at the station for examination. The symptoms in a majority of the acute cases were of from 12 to 72 hours standing, while symptoms of subacute cases were of three to nine days duration. The symptoms of the chronic form are mild, such as loss of appetite, dullness, slight inco-ordination in walking followed by recovery in two or three days.

In response to a set of questions sent out to veterinarians in the State, reports were received of the deaths of 100 of 134 cows affected, 465 of 612 horses, and 99 of 115 mules. Bacteriological examinations of the brains of several horses and cows gave negative results.

Two veterinarians reported slight success in treating the disease by intravenous injections of a solution of Pot. permanganate. The best method of combating it lies in prevention; mouldy, improperly cured, fermented, or damaged feed should not be fed to animals. It is stated that at the Elmendorf farm, one of the largest stock farms in this country, where the damaged corn was floated and only sound corn fed, no cases appeared.

F. E. P.

EASTERN COUNTIES VETERINARY MEDICAL SOCIETY.

A meeting was held on Thursday, Sept. 11th, at the Royal Aquarium at Yarmouth. The members first lunched together, after which a short business agenda was discussed. In the absence of the President, a Vice-president, Mr. W. L. Little, Yarmouth, was elected to the chair, and the other members attending were Messrs. W. Shipley, Yarmouth; E. Margarson, Swaffham; P. Turner, Ixworth; E. A. Hudson, Barrow; T. E. Auger, Wymondham; H. E. Wilkinson, Martham; A. Holl, New Buckenham; W. Waters, Blofield; J. F. Thurston, Fressingfield; Sidney Smith, sen., Lowestoft; G. Macintyre, Loddon; T. Love, Paston; J. Buckingham, Harleston; M. Bray, Docking; and Sydney Smith, jun., Lowestoft, hon. sec.; with, as visitors, Messrs. C. Boreham, Colchester; R. P. Turner, Ixworth; and W. Shipley, jun., Yarmouth.

Apologies for absence were received from the President, Mr. F. B. O. Taylor; Messrs. E. H. Leach, T. G. Heatley, F. L. Gooch, J. E. Kitchen, F. Morton Wallis, J. Hammond, sen., H. P. Standley, H. V. Low, J. Robertson, J. J. Scott, T. E. Barcham, H. F. Downe, D. S. Jack, H. Buckingham, J. Barr, A. F. Castle, and A. C. Holl. Prof. Hobday wired from Horning that a motor breakdown prevented his attending.

The HON. SEC. said that 19 members failed to reply. He also announced that at the next meeting he should tender his resignation so that anybody who wished to take up the duties would have time to consider it. His resignation was due to several reasons, and having been Secretary for three years he thought that he had done his little bit for the Society.

Resignations. The Hon. Sec. read a letter from Mr. F. B O. Taylor from Stratford-on-Avon, stating that as he had now left Norfolk he desired to resign, which he was sorry to do, as he had always enjoyed attending the meetings.

A similar letter was received from Mr. R. B. Palmer who had left North Walsham for Warwick.

Mr. W. SHIPLEY moved that a letter be sent to each gentleman expressing regret at their removal and conveying the good wishes of the members for their prosperity in the districts to which they had gone. He alluded to the fact that Mr. Taylor acted as Hon. Sec. of the Society for some years.

Mr. SIDNEY SMITH seconded, and this was carried unanimously.

Next Meeting. On the proposal of Mr. W. Shipley, seconded by Mr. E. Margarson, it was resolved to hold the next meeting at Norwich.

TUBERCULOSIS.

The HON. SEC. announced that Mr. Sidney Villar had consented to read his paper at the next meeting.

A FEW CASES OF INTEREST.

By Mr. WILFRID WATERS, M.R.C.V.S., Blofield.

Gentlemen,—When our Secretary asked me to read a paper at this meeting, I decided to bring before your notice a few cases which had proved of special interest to me, in the hope that they might also appeal to you, and so be the means of evoking a good discussion.

FRACTURES IN FOALS AND COLTS.

A few years ago there appeared in *The Veterinary Record* several articles on the desirability of setting fractures in cattle, and having been very successful in the treatment of bovine fractures myself, I made up my mind that I would try my luck with foals or colts whenever I had the chance. I have had two such cases which I will describe.

Case I. On March 24th, 1910, I was called to see a valuable Shire filly foal by "Redlynch Forest King," three days old, suffering from a fractured humerus in the near fore leg, probably as a sequel to being stamped upon by the mare. Not being able to affix splints and bandages so high up in the leg, I simply applied a pitch plaster from the top of the scapula to the radius. All the straw in the box was replaced by chaff and the foal left there to take its chance. In about three or four weeks the foal began to use the broken limb, and eventually made a very good recovery, in fact the broken leg is now the better of the two, because unfortunately as a result of having to support all the weight for five or six weeks, the off fore leg became very pigeon-toed, and is so to this day. The filly, however, is able to work alright, and is likely to make a valuable brood mare.

Case II. A yearling filly, suffering from a fractured radius of the near fore, the sequel to a kick. I tried to set this case by means of splints and adhesive plaster bandages, but when the swelling in leg began to subside two or three days after, the bandages got loosened and slipped off. I then decided to apply a pitch plaster, as in the previous case, and the filly made an uneventful recovery, and was sold six months later for 21 guineas at a public auction.

A Peculiar Shiverer.

In Oct., 1910, a client purchased a three-year-old cart colt at a Michaelmas sale, and on its arrival home, worked it on the farm without shoes till Christmas time. Then when the land got harder, he sent it to the blacksmith to be shod, and was much surprised to have it returned, as the farrier found he could not lift his front feet up. I was called in to see the colt, and found that he could trot quite freely, could back without his tail quivering and seemed to all intents quite sound, until one tried to lift his fore feet up. Then he would begin to tremble all over and bear his whole weight on the limb you had hold of, so making it an impossibility to get off the ground. I tried him with a rope over his shoulder to no effect, and even put him into slings so that we might shoe him, but all to no avail. Finally we had to cast him to shoe, and this was done periodically every few months until he was sold a short time ago.

One of the peculiar features about this case is that the farrier always shod his hind feet without any trouble right to the end. Finally, I might add, that three or four months after I first saw him he gradually developed into a typical shiverer, *i.e.* lifting his tail and hind legs when made to back, so there is no question in my mind that the symptoms I have described were due to "shivering."

Dislocation of the Carpo-Metacarpal Joint.

I was asked to see last April a bay pony which had got entangled in an iron hurdle, and had injured itself. Upon examination I was surprised to find that the knee joint was dislocated, the leg being bent at such an acute angle that it was almost impossible for the pony to get the toe of that limb on to the ground; and, figuratively speaking, one could hang one's hat on the proximal end of the metacarpus. I tried in vain for half-an-hour to reduce the dislocation, and at last went home to get my hobbles and chloroform apparatus. The pony was cast very easily, leaving the affected leg unhobbled, and much to my surprise, on examining the limb directly afterwards, found that the dislocation had reduced itself. The pony was naturally stiff for a few days, but made an uneventful recovery. My reason for recording this case is its rarity.

A Peculiar Case of Redworm.

In April, 1909, I received an urgent message one evening about 9 o'clock to see a mare presenting the following history, symptoms, etc. The subject was an eight-year-old cart mare in the pink of condition. She had been in regular work until 1 p.m. that day, and was only left in the stable that afternoon because she was not wanted. Nothing was noticed amiss with her at tea time, but she was found very ill at 9 o'clock.

Symptoms.—Temp. 105 F., pulse weak and over 100, brick red condition of conjunctival mucous membrane, violent purgation, cold perspiration; no apparent pain, but in a general state of collapse.

Prognosis.—Decidedly unfavourable.

Diagnosis.—I first thought she had ruptured a blood vessel, but of course the colour of the mucous membrane negatived that. I also thought of "redworm," but the age and condition of the mare seemed to contra-indicate that, so beyond telling the owner that she was dying, I made no diagnosis. She gradually got weaker, and died at 5 a.m. next morning.

Post-mortem.—The intestine from beginning to end was nearly black with enteritis, the inside lining of the gut was literally covered with sclerostomata tetracantha, and finally there were three ruptures in the large colon, through each of which one could pass one's finger. These ruptures were evidently made direct by the redworm passing through the bowel wall, for in each rupture the worms were in close proximity to the edges of the wound.

Remarks.—This case is, I think, of great interest when one considers the age and condition of the mare, and also that she had been working within a few hours of death, in spite of the intense enteritis.

Rankness in Spayed Sows.

During the past year I have been greatly annoyed at receiving complaints from farmers to the effect that a large proportion of sow pigs in certain litters that I had spayed had not been cut clean. A man always knows when he has left an ovary in a sow, but in the litter about which I received the complaint I felt positive that such was not the case. About three months ago I spayed five litters for one client, which pigs varied in age from five to seven weeks. A few days later I was asked to see them, and found that practically every sow had vulva greatly inflamed and looked fit for service, which was especially noticeable in the younger sows of only six weeks of age.

I was unable to account for the trouble, but told my client I would pay him £1 if he cared to kill any sow pig in the five litters and find an ovary. This offer was declined. Fortunately for me a few days later this client purchased two litters of pigs, which had been spayed by another veterinary surgeon previous to purchase. Within a week all the sow pigs of these two litters became affected in the same way. Being asked to advise in the matter once more, I enquired carefully as to their method of feeding, and found that directly they were taken off the sows—the time also that they were spayed—their diet consisted largely of wheat, which had been so heated and damaged, as a result of last year's bad harvest, that it was valueless to sell, and so was used as pigs' food. Being suspicious of this article of diet, I went round to all my clients who had made complaints and found that in every case their pigs had been fed on damaged corn, principally wheat.

I should like to ask the members present if they have ever had any similar trouble, and also if they can explain, physiologically, the reason for damaged wheat affecting the vulva in this way. Personally, I think there seems a great similarity between this case and

that of laminitis in horses caused by eating too much wheat.

Torsion of the Uterus in a Mare.

On May 9th, 1913, at 6 p.m., I received an urgent message to attend a mare which was unable to foal. On my arrival I learned that the mare showed labour pains when on the plough at 9 o'clock that morning, and so was brought home. Much to owner's surprise, although her labour pains kept coming on every few minutes, they never seemed sharp enough to cause her to strain and so burst her water bladder. I found the mare's temperature and pulse to be about normal, and on introducing my hand within the vagina everything seemed natural, although there was no appearance of foaling, the os uteri being quite closed. The mare kept walking round and round the box, then dropping to the ground in pain, only to jump up again almost directly without showing any tendency to strain. I was inclined at first to regard it as a case of colic, but the bowels seemed quite active, and the mare dunged and staled regularly about every half hour. I prescribed a laxative drench, but refrained from sedatives, as I did not wish to retard the labour pains.

These symptoms went on unceasingly from 8 a.m. on May 9th to 6 p.m. on May 11th, and although at times the mare suffered fearful agony and was white with foam, she never showed any tendency to strain.

At 6 p.m. on May 11th I received another urgent message, and found that she was now straining violently and passing a few drops of liquor amnii. On passing my right hand within the vagina I found the os uteri to be partly opened, but to my surprise I was unable to effect an entrance to the uterus.

I now inserted my left hand and found that directly I passed through the os, if I turned my hand sharply to the right, I was able to enter the womb and find the foal tucked into the right flank of mare. Of course, I now saw that I had a case of torsion of the womb to deal with, so inserting my left arm again I tried to work the womb back into its correct position by moving my arm towards the left flank. After a time I was able to straighten the womb a little, and with my left hand managed to rope the fore legs and head of foal, and when these were pulled steadily towards the left side of the mare, we were able to deliver the foal and right the uterus at the same time.

The mare was naturally very weak and almost in a state of collapse, so we gave her half a pint of neat whiskey, rugged her up, and rubbed her all over with embrocation. Next day she had a temperature of 104 F., but showed no symptoms of metritis. On the following day her temperature dropped almost to normal, and she passed out of my hands on the 14th.

Remarks.—I consider I was very fortunate in being able to foal this mare so easily—it only took about half an hour—as I quite expected I should have had to resort to chloroform, and perhaps roll her down hill. I should like to draw attention to the fact that, in spite of her being in labour 58 hours, she had no inflammation of the womb or uterine passages. This was undoubtedly due to the fact that she did not strain at all throughout her long period of labour.

Hodgkin's Disease in a Dog.

On August 13th last, I was requested to see an aged Scotch terrier, as the owner thought he was suffering from goitre. I was surprised to find about 15 tumours under his throat in the region of the larynx, which tumours varied in size from a filbert to a hen's egg, were quite painless, and but for pressing on the larynx seemed likely to cause no inconvenience. The temperature was normal, appetite good, but there was a slight cough, and on examining the mouth I found the tonsils were greatly inflamed.

Diagnosis. First I assured the owner it was not goitre, and then had to admit I could not give the complaint a name, but thought it was some bacterial infection which had reached the glands of the throat by means of the tonsils; consequently I prescribed liberal doses of Pot. iod. internally and liniments externally.

Four days after the first visit two more swellings appeared, one on the point of each shoulder. As these tumours did not appear to alter in size or consistence, on Aug. 26th I asked Mr. Wilkinson, of Martham, to see him with me. As a result of this consultation we were at first inclined to think it a case of melanosis, but the inflamed condition of tonsils negatived that, so we left the diagnosis an open question and prescribed a course of arsenic as a change.

On Sept. 2nd, as dog had made no progress and other swellings had made their appearances, one beneath the tongue and one near the penis, the owner requested me to poison him. I was not allowed to make an exhaus- post-mortem, but permitted to remove two or three tumours for examination. One of these I sent to London, and had a report from Mr. Sheather to the effect that the so-called tumour was an enlarged lymphatic gland, and that from the symptoms I had described he had no doubt it was a case of Hodgkin's disease.

On looking up this complaint in my pathology notes I find it is a disease in which many, or may be, the whole of the lymphatic glands of the body are greatly enlarged, the cause of condition being obscure. The enlargement appears to be due to the addition of lymphocyte cells to the gland substance, and contrary to what one might expect there is no increase in the number of leucocytes formed, and there is usually a more or less marked anæmia resulting in death.

Discussion.

The Chairman said these notes were of much interest and the members were all obliged to Mr. Waters. Fractures especially interested him, because a good many people, himself included, when called to fractures in colts or other animals slaughtered too soon, instead of giving them a trial. He remembered a steer bought at market, and the owner on getting it home found it had a broken metacarpal bone. It was set in plaster of Paris and had done so remarkably well that he was encouraged to try other cases.

Shivering in the fore leg was very rare and cases of the sort appeared quite mysterious. The case of redworm was very singular, but Mr. Waters did not say if there had been any peritonitis. If there was peritonitis present that was the cause of death. If there was no peritonitis the rupture did not count to any extent so far as the death of the animal was concerned. With these ruptures, especially as they were not very large, the animal would not have died without peritonitis. The sclerostomum armatus weakened the bowel for more than the tetracanthus. The armatus was very destructive toward its hosts, perforating the bowel or weakening it so that it was very liable to rupture.

He did not castrate many sows, and this year was the first time he had had any complaint of sows coming into season after the operation. He did them properly but ceased to worry about it after he heard that the Suffolk gentlemen who were experts were having the same trouble.

The case of torsion struck him as being rather one of displacement possibly through one of the ligaments becoming ruptured or elongated and allowing the womb to come to the flank.

Mr. W. Shipley said he wished to congratulate Mr. Waters on his interesting notes because he was prepared to admit some of his failures, which men did not often do. At the same time Mr. Watson had related cases that were neither stupid nor trivial. The steer to which the Chairman referred which fractured a leg he

believed would be one of the best seen at the Christmas sale. When the farmer showed it to him two or three months ago he did not recognise which leg was broken. It showed the possibility of setting fractures in certain cases with success. Shivering in the fore legs was very interesting, and he wondered whether it was a positive case of shivering, and if so it should have been kept under observation, as their knowledge of shivering at the time was limited. He had always presumed shivering was progressive from the posterior portion of the spinal cord anteriorly, but Mr. Waters' case commenced in the fore legs and eventually developed in the hind legs. Dr. McCall, of Glasgow, had made numerous experiments and taken sections of the spinal cord, with no very great results, and a condition of this kind might be helpful to him. It might be that while looking for the seat of shivering in the cord in the lumbar region they ought to look right away up to the motor sections of the brain. He once examined a stallion that had decisive stringhalt in one fore leg which was very peculiar, and though he felt certain, his opinion was not supported by othsr people. When led a little way he suddenly brought up his fore-leg, jammed it on the ground and went on again comfortably.

The question of redworm should receive more attention. Many cases of acute enteritis in five or six year old horses might be caused by redworm, though they did not always appreciate it. In many cases where death occurred from redworm there was supposed to be septic poisoning through absorption of matter due to ulceration or excoriation of the mucous membrane of the intestines.

He could not understand why feeding young sows on heated wheat should produce the condition described, but it was quite a reasonable suggestion. In Suffolk there had been a certain amount of reflection cast on veterinary surgeons who, it was thought, had not done the spaying properly. Some veterinary surgeons had suggested that there was some sort of septic vaginitis. They ought not to be content, and should go further to find out some other cause why heated wheat acted in this way. He suggested the Chairman should relate a case of torsion of the uterus in which he assisted him, and in which the result was satisfactory, because it showed a man working single-handed in a difficult case might succeed with a little help.

The CHAIRMAN said a man sent for him to see a mare which he said was foaling, but he thought it was colic. Next day the man sent again and said she had more pain. He did not examine her, as he did not suspect foaling. The following day he was told she was down and straining badly. He examined per vaginam, and found it very difficult to get his fingers into the womb. Mr. Shipley assisted him, and when they got their hands in the first thing they grasped was a foot. After a time, by rolling her they managed to get this foot into the opening and get a rope on to it. By holding on to this and rolling her from side to side they got the rope on to both legs and the jaw. Finally they managed to right the womb, the os became larger, until they got some portion of the foal out by traction, and it was delivered. The mare was under chloroform, and she was ill for some days, but she made a good recovery.

Mr. SHIPLEY said one of the most important things was that they cast the mare and chloroformed her. While manipulating the outside of her abdomen they were able to push the fœtus and uterus more or less into proper position. The result was most successful, for he never anticipated the mare would live, but she did, and was afterwards served by a stallion and sold. It was a complete twist. He once went to a cow with a twist in the neck of the uterus, and by casting her delivered the calf. The following year he was called to the cow, but this time could not untwist the neck of the uterus. He could do nothing, and therefore cut the aorta, but even when she was dead they were absolutely unable to move the uterus.

Mr. THURSTON said he saw in *The Record* some years ago a report of a lawsuit brought on the Continent by the owner of some pigs which became rank after spaying, against the castrator. Needless to say he lost his case. The pigs had been fed on sprouted corn. He had his attention called to some pigs on which he had operated during the season, and he found in every case they had been fed on sprouted grain. He was once called to a heifer with a fractured leg, which he put in plaster and it mended. This particular animal had, in all, four fractures. Only one leg was unfractured, while one leg was fractured twice.

Mr. HUDSON said he had got into the same trouble as Mr. Waters with regard to sow pigs. The owner put the hog with them to see if they would breed, but it did not come off. Many pigs castrated, both by himself and other people, had been swollen up behind this year, and they had generally been fed with over-heated barley or wheat, or corn spoiled in last year's bad harvest. In regard to torsion of the womb, he was called to a cow that had been uneasy from 9 a.m. to 9 p.m., but showed no sign of calving. He found she had torsion of the neck of the uterus. He got his fingers into the uterus, tied her legs, rolled her about, and had a man pushing on her body, eventually the uterus twisted round, and they got the calf. He had to go and syringe out the cow, which made a good recovery. Two years ago he went to a Shire mare, due to foal on April 30th. She had been at work, and had made every preparation for foaling, but nothing came forward and she had no pains. She was kept at work till July 25th, when she had decreased in size and lost flesh a little. He was sent for on July 25th and found the foal dead. It had probably been dead two months, and was putrid. He syringed her out, and she made an uneventful recovery. Two years later she died from azoturia. He never knew a mare to carry a dead foal so long. He had made post-mortems on horses from the Fen districts, mostly in poor condition, which had been transferred to highland farms where they were put on corn, and in several cases died off in a few hours; and he frequently found them full of red worms.

Mr. BRAY said he had a case of torsion in a heifer. He got his hand in and felt the grooves of the womb going in a definite twist, but it evidently righted itself suddenly, and he delivered the calf. He thought the heifer was all right, but she collapsed the same night, and as he never saw her again he did not know the cause of death. As to setting fractures, he found ordinary tar rope an excellent thing. He bound it round and round over tow, which enabled him to keep it to the shape of the leg. Last week he had a case of a fractured jaw, and it was a difficult thing to know how to put the splints on. He used a pitch plaster and cut a leather splint to fix it on outside, but the owner got tired of it in three days, though he said it would have to remain five weeks. The animal was shot, and he saw it after death. It was a compound fracture completely across, and exactly at the bend.

The CHAIRMAN said that some members, when speaking of the twisting of the uterus, or torsion, seemed under the impression it was a complete twist, but that was very rare. If it was a complete twist it would be absolutely impossible to untwist. It was a half, or at most a three-quarter twist. If when putting in one's hand the grooves were followed and then a handkerchief was twisted to correspond, it would be found to be a half-turn, but that was quite sufficient to stop a foal coming. He was called to a marsh farm to set the fracture of a cow's leg. He put on a plaster of Paris bandage, strengthened with splints, and although the cow before he put on the bandage ran about on three legs, she put her whole weight on the damaged leg as soon as

he had bandaged it; the whole thing went almost double, and nothing he could do would alter it. In the end the cow had to be destroyed. Detailing a case of quittor, for which he said Mr Shipley's treatment was removal of the cartilage, injections had been tried, but seemed of no use. The animal was cast and they stripped the horn, found the diseased cartilage, removed it, and in scraping out the wound with a curette there was a slip through the tissues into the joint, and at once the wound was flooded with synovia. The wound was flushed with perchloride, plugged with oil of cloves and cotton wool, and bandaged. At the end of three days the bandage was removed and the wound seemed healthy, but there was a little coagulated synovia. It was again bandaged, and at the end of another three days no synovia was found, and the hole seemed to have closed up. The animal made a good recovery, and had no bandage on. He hoped in a day or two it would be turned out to marsh.

Mr. WATERS, replying on the discussion, said he omitted to state in the case of redworm that peritonitis was the ultimate cause of death. The ruptures were so large that there was a quantity of fluid in the peritoneum, which was bound to set up peritonitis. In the case of torsion he would admit it was not a very bad twist, but when a mare had labour pains for 50 hours and no amniotic fluid passed, it went to prove there was a very distinct twist. Fractures in cattle were very easy to set, and it was a great omission if they did not set fractures in the case of bullocks under two years old not fit for slaughter, unless the fracture were compound. He had set nine or ten cases in his small way in the last four years and every one did exceedingly well. The animals might go a little stiff, but that was all, and the owners fattened them. As to spayed sows, he felt rather proud when everybody agreed it was due to heated grain. But the question should be followed up for its physiological interest. He had been asked what the treatment was for Hodgkins disease in the dog. His chief reason for mentioning this was that he wanted to know himself, but apparently the members were unable to tell him. Mr. Little, who examined one of these glands before the meeting, told him that arsenic was the treatment for it, but he did not know whether he would see any more cases to try it. For setting fractures he used to make a pitch plaster of resin and pitch, but now he bought the sticks from the chemist, broke them up, put them into something over the fire to melt, smeared all over the affected limb, and covered it with tow making a thick plaster all over it. He was always careful to have the patient put into a box where there was no straw and only chaff. He once set a three-year-old bullock's fractured metacarpus with plaster and splints, and it did well. Mr. Little mentioned a case of opening the joint in quittor. Seven or eight months ago he was operating on a mare for the same thing, and he was about to make the last cut as the mare wss just coming round from the chloroform, when she gave a jerk and the knife slipped through and let out some synovia. He did the same thing as Mr. Little, plugged it with oil of cloves and cotton wool and bandaged it. The accident did not seem to make any difference, and the quittor did far better than if it had not been opened.

Mr. SHIPLEY moved a vote of thanks to Mr. Waters for contributing his interesting paper.

The HON. SEC. seconded, and Mr. Waters, in reply, said he was very glad his paper had been appreciated.

The HON. SEC. proposed a vote of thanks to the Chairman who, he said, was in the chair for the first time, and he had conducted the business admirably.

Mr. THURSTON seconded, and the Chairman briefly replied.

ANNUAL REPORT OF VETERINARY SECTION, PUBLIC HEALTH DEPARTMENT, MANCHESTER, 1912. MILK AND TUBERCULOSIS. [ABSTRACT.]

This report forms part of the Report on the Health of the City of Manchester, by James A. Niven, M.A., M.B., LL.D. It is not absorbed and put out of sight as in the reports of a few of the northern cities.

These Manchester cowsheds number 229, on 118 farmsteads, having a total housing capacity for approximately 2,000 cows.

The general standard of cleanliness and supervision has been fairly well maintained, allowing for the ordinary lapses which are bound to occur in any business.

The total number of inspections of City cows during the year was 7,981. A careful enumeration of the cows housed was not made during the year. The last time this was done the total number was found to be 1943. The total will now be somewhat less.

During the past year there have been many factors to disturb the general business of dairying. The price of cows rose to an abnormal height; it would be no exaggeration to say that the cost of good-class dairy cows had risen not less than £3 or £4 per head, and the cost of all foodstuffs had risen correspondingly. The supply of dairy cows was already limited enough to make matters difficult, when the outbreak of foot-and mouth disease appeared, bringing about an enormous dislocation of trade, and one of our greatest sources of supply was entirely cut off. How serious this has been can only be appreciated by those who come intimately in contact with the dairy farmers, whose business is carried on within the boundaries of the City, for, practically speaking, there is no breeding of cattle within our area. The system in vogue is usually described as the "one note" system, the practice being to buy good cows at the height of profit, milk them as long as the milking period lasts—where cows are left barren the period of lactation is as a general rule considerably prolonged—finally the cow is fattened and sold to the butcher. The conditions are entirely unlike those on country farms. Economically the system is bad. It denudes the bovine population of many excellent animals whose services would be extremely valuable for breeding purposes. On the other hand the system affords considerable protection against tuberculosis, inasmuch as the population is continually being changed and refreshed by carefully-selected, healthy young cows, which, being well housed and well fed, show little tendency to develop disease. But there must be a plentiful supply of the class of cow required, and they must be obtainable at a reasonable price. This has not been the case in the past year, and the result is that many men have been compelled to purchase animals of a class that for years I have done my best to prevent, and I am compelled to accept animals of a class I object to very much.

It will thus be apparent that the necessity for rigid and repeated inspection is greater now than it has been for some years past, and it will be impossible to maintain the high standard of freedom from infection in the milk supply produced at our doors, unless adequate assistance is provided to enable an efficient supervision to be exercised.

During the year, three cases of tuberculosis of the udder were found in the cows within the City. No case was of such a character as to attract the suspicions of the owners. All three cows were killed; two of the carcases were passed for food, and the third was condemned. In addition, 15 cows were removed from the City because they were, in my opinion, suffering from tuberculosis in one or other of its many forms, other than disease of the udder.

Tuberculous Milk.

During the year, 576 samples of milk have been collected by the Food and Drug Inspectors in connection with tuberculosis. Of this number, 555 were collected at the railway stations, and the remainder from carts coming in by road. The number of farmers represented in the total is 484.

County.		T. Milk.	Per cent.
Cheshire	294	41	13·94
Derbyshire	75	3	4·0
Staffordshire	49	5	10·2
Lancashire	50	3	6·0
Shropshire	3	1	33·33
Yorkshire	10	1	10·00

Westmorland, Lincolnshire, and Wiltshire one each, and none of these sent tuberculous milk.

Table showing number of farmers' milk tested during the year, and the number found to cause tuberculosis in the experimental animals.

Year.	Tested.	Tuberculous.	Year.	Tested.	Tuberculous.
1901	272	27	1908	289	27
1902	345	36	1909	535	31
1903	329	45	1910	468	30
1904	318	29	1911	494	51
1905	565	47	1912	484	54
1906	542	42	——	——	—
1907	562	38	Total	5203	457

The percentage of farmers sending tuberculous milk was 11·15, the highest figure during the past 12 years, with the exception of the year 1903. In fact since the 1909, when we reached our lowest figure (5·79 per cent.) the rise has been extraordinary; the most marked rise being in the figures for the year 1911.

The continued rise is disturbing, and, as far as I can see, very difficult of explanation.

I ventured in last year's report to suggest that the summer of 1910 had had disastrous effects upon the health of cattle, inasmuch as they were all subjected more or less to conditions of insufficiency of food, and much of the food available was of inferior quality, so far as its nutrient properties were concerned. Despite many statements to the contrary, I am still of opinion that the results of that season were far more serious than many may suppose, and that they will be felt for some time to come.

If the rise so marked during the past two years in the amount of tuberculous milk, and, presumably, the amount of bovine tuberculosis, were due solely to the relaxation of vigilance on the part of the stock-keeper, it would not be difficult for men experienced in the inspection of cattle, and in the assessment of the character of the individuals concerned, to detect some evidence of it on the farms. So far I find no evidence at all to justify any such accusation, indeed I may say that I have only seen one really well-marked case of tuberculosis of the udder during the whole year. The general condition of the cattle is apparently good, and, in most cases, even to the skilled observer, a careful examination of the cows at pasture would show nothing. I note that such a shrewd observer as Prof. Delépine, whose opinion on these matters has to be treated with the greatest respect, is inclined to think that what may be termed the period of retrogression is due in some part to the carelessness of farmers, induced by the promise of protective legislation, or, rather, legislation which appears protective—the promise to pay compensation for diseased animals. I wish I could agree to this supposition; it would be a very simple explanation, and would merely require for its determination a strengthening of the measures in force. Unfortunately, the actual evidence which I have obtained is that they do not welcome legislation at all, and if the experiences gained immediately prior to the Tuberculosis Order, 1913, coming into force are any indication of the attitude of the dairy farmers, then the conclusion forced upon one is the exact opposite. For the six months prior to this enactment coming into effect, cows to which the very slightest suspicion could be directed, were being removed from very many farms. The farmer seldom, or never, welcomes the inquisitorial inspector, be he medical, veterinary, or police, but he would much rather see either of the first two on his farm than the latter.

Where actually the true cause for the increase lies is impossible to say, but one may draw deductions by some facts made evident by an examination of the material at hand. In the first place, I have been carefully examining the records of the past years, and I find no year in which so many very young cows were found suffering tuberculosis of the udder. Of the 44 cows found during the year suffering from tubercular disease of the udder, no less than 16 had had not more than two calves, and of these nine were heifers which had only had one calf. The last figure is particularly striking, for, so far as our previous records are concerned, in no three years have we had as many young animals in the first lactation period proved to be suffering from disease of the udder.

I cannot admit that there has ever been any less care taken in the examination of heifers than aged cows on the grounds that the young animals are less likely to be the subject of disease of the udder than older animals. Less time is required for the examination it is true, as the udder is only small and partially developed; but even slight lesions are much more easily detected, and I have always regarded the careful inspection of the recruits as a matter of the highest importance.

Most young bovines commence the duties of maternity long before maturity, and, as a matter of actual practical experience, all other things being equal, if the highest milking powers are to be developed, the function of calf-bearing must not be unduly delayed, and, as will also be evident, it is essential that milking cattle should be brought into profit as soon as is compatible with sound principles of dairying.

On the other hand, if these young animals have to suffer during their period of adolescence from lack of good food, and live on the great majority of farms, in infective surroundings—for no greater indictment could be brought against farmers than the awful conditions which too frequently surround the rearing of calves—then it would appear that every essential has been provided for the unrestricted development of tuberculosis in the young animals.

It may be that there are many other factors of which we are not cognisant which play an important part in the rise in the amount of tuberculosis. As I have already stated, I have seen no evidence of neglect, nor are there many "wasters" about, but I have certainly had the impression that latterly there have been more cases of suspicious conditions simulating tuberculosis, the pulmonary lesions being, as usual, most marked.

Another factor which may also play an important part, is the indiscriminate slaughter of young calves in such enormous numbers for veal. I do not refer to it in regard to their fitness for slaughter, or otherwise, but from the economic standpoint that such wholesale slaughter in dairy districts is not sound policy. I know that it will be stated immediately that calf-rearing is not profitable. With that I have nothing to do, but to point out that a very large percentage of the female calves slaughtered are the offspring of excellent dairy animals of a reasonably good milking capacity, and such as would most probably grow up into good useful dairy animals themselves. The effects of this policy will be felt by the farmers themselves, even if it

is not being felt now. I have referred in the earlier portion of my report to the abnormally high price of stock for the past two years. I don't think that an abnormally increased demand is much responsible as the fact that the supply is inadequate, and, in my opinion, nothing could be more disastrous than a shortage of good, well-bred, healthy young stock to replenish herds frequently; in fact, the supply should excess the demand to produce the ideal conditions.

During the year 44 cows were found to be suffering from tuberculosis of the udder, and of these 43 were slaughtered. Of these the carcases of eight were passed as fit for food, four partially, and the remaining 31 were condemned as unfit for food.

Eleven notifications were received during the year, but in not a single case was the subject of notification found to be suffering from tuberculosis of the udder. In nine cases, however, the cows were found to be suffering from pulmonary tuberculosis, and were slaughtered, and in every case the diagnosis was confirmed at post-mortem.

It should be stated that the diagnosis of early tuberculosis of the udder presents increasing difficulties, requiring the very greatest care in the manipulation of the udder itself. The discovery of the tubercle bacillus microscopically in such a high percentage of our cases by Professor Delépine has been of the greatest value both to the farmers concerned, to whom the saving of time means a considerable saving of money, and also to us, as it has enabled us to dispose finally of our cases much more quickly than was formerly the case.

One case occurred during the year which illustrated some of the difficulties in finding the actual cow producing the infective milk. A sample of mixed milk was taken in the usual way at the railway station, and was reported by Professor Delépine as having been found to cause tuberculosis in the inoculated animals. The farm was visited by me, and 46 cows were carefully examined. The herd was an excellent one, the cows, without exception, being all big, fine, healthy-looking animals, with no appearance of disease among them.

I found one cow presenting a very slight lesion of no decided character in one quarter of her udder, and from this cow a sample was obtained; and I also took a sample of milk from a cow which presented a somewhat irregular udder, with no definite lesion. Both these samples were submitted to the biological test by Prof. Delépine, and he reported both as negative.

In the meantime a further mixed sample was obtained and submitted for examination, and again Professor Delépine reported that the mixed milk was tuberculous. I again visited the farm, and could find still no evidence, except the cow first referred to; she had been moved to another stall in the cowshed, and this time the lesion appeared most prominent in another quarter, so a sample was taken from this quarter, and submitted again for examination, and again with negative results. On this occasion I took a mixed control from the whole herd myself, as there was just a possibility that, owing to there being so many others of the same name in the district, a mistake in the identity of the farm had been made. That this was not so was proved when Prof. Delépine reported my control same to be tuberculous.

I therefore again visited the farm, and on this occasion divided the whole herd into nine groups, and took a mixed sample from each, and each of these nine group controls was found free from infection; but in the interval between this last visit and the previous one the roan cow from which I had already taken two samples had been sold. That no other cow had been sold I was quite certain, because I had the whole herd under observation so much that I could have told almost to a certainty if any cow had been changed, and, further, during the greater part of the time this investigation was being carried out, the Prohibition of Movement Order was in force on account of some outbreaks of foot-and-mouth disease in the area.

It is remarkable that all the mixed samples taken while this particular cow was in the herd should prove tuberculous, and that the infection should cease immediately she was removed; and yet the two special samples taken direct from her yielded no result. Further mixed samples taken from the milk supplied from this farm remain free from infection. It was unfortunate that we lost sight of this cow, but it was not possible to make the farmer keep her, however interesting she might have proved scientifically; the financial aspect appealed to him, and he could see that she was the only cow in the herd of which I had the slightest suspicion.

The total number of country cows examined during the year is 3203. From the particulars supplied by the farmers, 399 of whom replied to our queries, we find that on these farms there were 7975 cows, or an average of 19·98 cows per farm; or if the general figures are averaged, it will be found that the milk of nearly 10,000 cows was tested during the year.

I should again like to place on record the valuable assistance rendered to Manchester by Dr. Meredith Young, the Medical Officer for the County of Chester. His activity in the work of improving the conditions of cattle housing in the County is unabated.

Tuberculin Test.

The table attached shows the results from October, 1904, to November, 1912, obtained in keeping a large herd free from tuberculosis. The work is an unqualified success. The development of the practice of rearing young stock sufficient to replenish the herd, is being pushed on. The results are most encouraging, the young stock have done well, and we shall soon have sufficient to be entirely self-supporting. The milk produced by this herd is supplied to Monsall Fever Hospital, Clayton Hospital, and Baguley Sanatorium.

Date.	* Milking Herd. Tested	Re-ac'td	Probationary.† Tested	Re-ac'td	Total. Tested	Passed.
1904, Oct.	85	—	18	4	103	97
1905, April	87	—	15	4	102	98
„ Oct.	84	—	14	5	98	93
1906, April	91	—	16	6	107	101
„ Oct.	73	1	28	7	102	94
1907, April	95	—	27	19	132	103
„ Oct.	81	—	28	13	119	96
1908, April	88	—	33	25	122	96
„ Oct.	91	1	32	16	123	107
1909, April	88	2	31	15	119	101
„ Oct.	93	—	22	14	115	107
1910, April	87	—	14	8	104	93
„ Oct.	91	1	16	9	107	98
1911, April	83	1	19	8	102	94
„ Nov.	85	1	37	34	122	88
1912, April	89	—	21	12	110	101
„ Nov.	89	1	43	39	91	128

* Animals having been previously tested.

† Animals purchased subject to passing the test.

In only three animals was the reaction tabled as "Doubtful," and in one of these bronchitis developed during the test.

J. W. Brittlebank, M.R.C.V.S., D.V.S.M.

The Southdown.—These, the oldest of British breeds, is essentially a native of Sussex, but from time immemorial it has always been the favourite breed with great landowners, who have proved beyond question that it will thrive and retain its inherent qualities as the best mutton-producer in the world, even when far removed from the Sussex Downs.

DISEASES OF ANIMALS ACTS 1894 TO 1911, SUMMARY OF RETURNS.

Period.	Anthrax. Outbreaks Confirm'd	Anthrax. Outbreaks Reported	Anthrax. Animals Confirm'd	Anthrax. Animals Reported	Foot-and-Mouth Disease. Outbreaks	Foot-and-Mouth Disease. Animals.	Glanders † (including Farcy) Outbreaks	Glanders † (including Farcy) Animals.	Parasitic Mange. Outbreaks	Parasitic Mange. Animals.	Sheep Scab. Outbreaks	Swine Fever. Outbreaks.	Swine Fever. Slaughtered. *
GT. BRITAIN. Week ended Sep. 13	3		4				1	1	22	33		30	268
Corresponding week in 1912	7		8		2	62	8	11	16	18	1	43	840
Corresponding week in 1911	13		14				7	12			2	37	394
Corresponding week in 1910		14		14			13	37			1	18	305
Total for 37 weeks, 1913	390		430				119	301	1952	3924	132	1790	23834
Corresponding period in 1912	583		662		77	563	134	247	2381	5139	175	2290	30080
Corresponding period in 1911	612		763		8	425	145	338			309	1840	21517
Corresponding period in 1910		1041		1249	2	15	270	818			344	1037	9472

†Counties affected, animals attacked: London 1.

Board of Agriculture and Fisheries, Sept. 16, 1913.

	Outbreaks											
IRELAND. Week ended Sep. 13	...	...	...	...	...	...	1	7	...	4
Corresponding Week in 1912 ...	...	...	1	13	...	...	...	1	1	6
Corresponding Week in 1911 ...	...	...	...	...	...	...	1	4	5	30
Corresponding Week in 1910 ...	...	...	...	...	...	...	...	6	...	...
Total for 37 weeks, 1913 ...	...	...	...	...	...	...	102	383	113	685
Corresponding period in 1912 ...	3	3	27	260	...	...	53	264	180	1499
Corresponding period in 1911 ...	7	14	...	...	2	3	51	258	97	1617
Corresponding period in 1910 ...	5	8	...	...	1	2	56	355	73	1707

* These figures include animals slaughtered and found affected on post-mortem examination.

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Sept. 15, 1913

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

Salvarsan in the Horse and Dog.

J. D. E. Holmes reports ("Memoirs of the Department of Agriculture in India, 1913." Vol. I. No. 2), his experiences in the treatment of surra in the horse and dog by salvarsan.

They are summarised as follows in *The Tropical Veterinary Bulletin.*

HORSE. In preliminary experiments the toxic dose by intravenous injection was ascertained approximately, and the effects of both small and full subtoxic doses were gauged by the period for which the peripheral circulation remained free from typanosomes after treatment.

In the first series of experiments 17 animals were given a single dose of the drug. Of these, 3 recovered, 11 had relapses, and 3 died. The dose administered varied from ·0014 to ·0094 grammes per pound body-weight.

In the second series of experiments three injections were given at intervals of one day. Only two animals were treated in this manner; in one there was a relapse and the other remained under observation for ten months without a reappearance of the trypanosomes being recorded.

Two animals received three injections at intervals of one week. In both cases there was a relapse. Four animals were given, in addition to the three injections of salvarsan, one dose of arsenic *in bolus*, the dose being one gramme. In none of these was a cure effected.

The author's conclusions may be summarised as follows:—

(1) The toxic dose of salvarsan for the horse administered intravenously is approximately ·01 gramme per pound body-weight, but individual susceptibility exists.

(2) An intravenous injection of salvarsan is followed by a disappearance of trypanosomes from the peripheral circulation for periods varying from 6 to 36 days. The relationship between the dose of the drug, and the period of absence of the trypanosomes is neither regular nor definite.

(3) In three cases a single dose effected a cure.

(4) By repeated administration a tolerance to the drug is established.

(5) Three intravenous injections did not give results superior to those obtained by a single injection.

(6) The administration of a large dose of arsenious oxide followed 24 hours later by an intravenous injection of salvarsan produced no better results than a single dose of either.

DOG. The difficulties in the way of treating dogs for surra lie in the facts that the dog is particularly susceptible to the disease, and also very intolerant of the drugs which have given the most encouraging results in other species.

Twenty-nine dogs were given a single injection of salvarsan in doses varying from ·006 to ·063 grammes per pound body-weight.

Of these two remained under observation for 370 days without a relapse. Eleven died in periods varying from a day to several weeks after treatment, but for the most part trypanosomes were absent from the circulation during that time. In four cases there were relapses, and the remainder of the dogs had to be destroyed owing to their having come into contact with a dog suspected of rabies.

In all these cases the drug was administered in an 0·5 per cent. solution.

In six instances the drug was used in a 1 in 250 solution, but all the dogs died within 48 hours after the injections were given.

Six dogs received injections at intervals of a day, but either death or relapse occurred in each case.

Of two dogs which received three injections at intervals of a week one recovered and one died. Similar results attended the experiments when only two injections were given at a similar interval.

Three dogs were given a single subcutaneous injection, but none recovered. It was found that subcutaneous injection produced painful swellings which either burst or were absorbed.

Intramuscular injection proved successful in one case and failed in another.

The following conclusions are drawn :—

(1) The toxic dose of salvarsan for the dog is about ·025 gramme per pound body-weight, and ·02 gramme is fairly well tolerated. More dilute solutions produce more markedly toxic symptoms than more concentrated ones.

(2) An intravenous injection may cause the disappearance of the trypanosomes from the circulation for periods varying from 20 to 97 days.

(3) Repeated injections do not give better results than a single administration of the drug.

(4) Subcutaneous and intramuscular injections are not well borne. Three rabbits which were given doses of ·000042 to ·000064 gramme all recovered.

[Surra does not immediately concern English practitioners, but some portion of this work upon salvarsan is capable of a wider application.—Ed.].

ANNUAL REPORT OF THE CIVIL VETERINARY DEPARTMENT UNITED PROVINCES, 1912-13. [ABSTRACT].

Mr. E. W. Oliver held charge of the department up to Feb. 21st, 1913, when he proceeded on leave. He also carried out the duties of Second Superintendent in addition to his own work from April 19th to Oct. 20th during the absence of Mr. C. W. Wilson on leave.

Mr. C. W. Wilson carried out the duties of Second Superintendent from April 1st to 18th, and from Oct. 21st to the end of the year. He also officiated as Superintendent from Feb. 21st. 1913, to the end of the year in addition to his own duties.

Mr. Oliver was on Tour for 133 days and travelled 555 miles by road and 18,268 miles by rail. He toured in 21 districts supervising the work of the veterinary inspectors and the district board veterinary assistants. Nearly all the veterinary hospitals and dispensaries were visited and sites for the erection of others were selected, while a great deal of travelling was undertaken to inspect various stallion stands and stud bulls maintained by local bodies and others. It was often found necessary to visit and spend some time at the Moradabad stallion depot for inspection and selection of sires for district work, and constant supervision of the bull-rearing farm at Lakhimpur has entailed a great deal of travelling. Land for another cattle farm at Madburi Kund in Muttra district has also been surveyed with the object of acquiring a suitable site for this purpose. Much touring has, as usual, been found necessary in connection with the Glanders, Farcy, Surra, and Dourine Acts, and in supervising sheep breeding operations in various localities. Mr. Oliver personally attended and carried out investigation and research in twenty outbreaks of disease, and wherever possible directed inoculations and treatment. He visited Bombay for the purchase of stallions and inspected various tonga lines in the provinces. During these tours district officers, landowners, managers of courts of wards, and others interested in agricultural stock were met and conferred with, and meetings of committees dealing with the question of improving the conditions of dairy produce were attended and expert advice given.

Mr. C. W. Wilson was on tour for 82 days during which time he toured in 24 districts and travelled 6678 miles by rail and 350 miles by road. He inspected the majority of the hospitals and dispensaries in his circle, all the stallion stands, and attended cattle fairs at Ballia, Dewa, Khairabad, Sardhwa, Attarra, Etawah, Hardoi, and Saharanpur acting as judge or member of committee. He inspected stud bulls the property of courts of wards, and advised special managers regarding cattle breeding and maintenance of stud animals. He personally attended outbreaks of cattle disease in 13 districts, and supervised the inoculation work. A considerable amount of his time was spent in checking inoculation returns, specially in those districts where opposition to inoculation had previously been met with. He was deputed to select for district boards, court of wards, and private persons, stud bulls from the Hissar cattle farm. The sheep flocks in his circle were inspected and advice given to those in whose hands the care of the flocks is entrusted. He attended the outbreak of foot-and-mouth disease at the Manjhra cattle farm and paid periodical visits of inspections. He personally accompanied the foot-and-mouth disease enquiry commission to village Manaura in the Jalaun district to demonstrate disease *in situ*, and attended the examinations of final year students at Punjab Veterinary College, Lahore, as a member of the board of examiners.

Veterinary Instruction. The veterinary colleges now provide for their students a suitable training in inoculation, etc., and these men on entering this department are, as opportunity occurs, deputed to districts under the supervision of an inspector where actual outbreaks of diseases exist, in order that they may acquire a working knowledge of inoculation methods as conducted in the field. A course of practical demonstration in pathology and bacteriology can be obtained now at the headquarter laboratory in Lucknow by young veterinary assistants, and these men before being drafted to a district have acquired a knowledge of laboratory methods essential to those working in the field.

It is regrettable that the offer of scholarships still fails to attract suitable young men of these provinces to the veterinary profession. The reason for this seems to be the natural disinclination of the young men in these provinces for any sort of practical work amongst domesticated animals. Last year it was suggested that if this state of things continued it would be advisable to throw open the scholarships to suitable men, residents of the Punjab and other allied provinces. His Honour the Lieut. Governor however was of opinion that no recourse should be made to this if it could be possibly avoided. After several years' trial the danger of the inadequate number of graduates for the department remains imminent.

Treatment of Disease. During the year under report 75,571 cases of contagious disease have been notified from practically all districts in the province with a reported mortality of 24,602. Rinderpest, as usual, has been the most serious and has accounted for 17,363 of the deaths reported. With the increasing attention given to and facilities for ascertaining details and reporting outbreaks, many more now-a-days come to light than in past years, and it is highly probable that only now approximately accurate estimates of the amount of contagious disease with its consequent annual mortality are being obtained.

Glanders and Farcy.—Thirty-eight animals either succumbed to the malady or were destroyed in accordance with the Glanders and Farcy Act. The disease

assumed a severe form on the Dehra Dun-Chakrata Road and also on the Kathgodam-Ranikhet Road, which is often the case when the disease occurs on tonga routes and those places where there is much equine traffic. A scheme has been introduced for the granting of compensation for compulsory slaughter of animals under this Act with a view of bringing to light suspicious cases which would otherwise not be reported.

Surra.—Very few cases of this disease have been discovered during the year. This is attributed to the great scarcity of certain blood-sucking flies (probably tabanus, tropicus, and others) which generally make their appearance annually at the "surra season." Those animals which last year were subjected to the arsenic treatment for this disease are still living and healthy. It is considered that this treatment, although difficult and expensive to apply in the field, may now be regarded as specific in a high percentage of cases.

Dourine.—Five fresh cases of this disease were brought to light during the year and dealt with under the Dourine Act. Suspected animals were traced, registered, and put under observation.

Tetanus.—Eighty-two cases have been reported by veterinary assistants from 18 districts, and 48 cases proved fatal.

Strangles.—One hundred and twenty-six cases of this disease were treated by veterinary assistants, out of which 15 proved fatal.

Epizootic Lymphangitis.—No case was reported.

Other Contagious Diseases.—Under this heading cases of horse-pox, piroplasmosis, influenza, anthrax, rabies, as well as those diseases caused by internal and external parasites have been met with, but up to the present it has not been found practicable to introduce a reliable system for obtaining returns.

Rinderpest.—This year very few districts altogether escaped its ravages, although many were affected by a benign form which was quickly suppressed. A very virulent type existed in the districts south of the Nepal forests, from whence it is believed to have extended into British India. The infection was probably brought by the cattle which annually migrate to those jungle tracts for the grazing. Owing to the almost wild nature of these herds a rapid spread of the disease ensues, and as they are untractable except in mobs or with the aid of the lasso it is difficult to apply those measures for its stamping out which are used when dealing with the ordinary domesticated cattle. Where the district board's veterinary staff was insufficient, provincial veterinary assistants from the headquarter staff were deputed and rendered the much-needed assistance. Inoculations were carried out in 37 districts. In the Jalaun district alone 9,115 cattle were immunised.

Hæmorrhagic Septicæmia.—This year appeared in 38 districts with a total mortality of 1962 as against 3679 of last year ; 12,667 cattle were inoculated with generally satisfactory results.

Black-quarter.—This malady appeared in 17 districts, and 1105 deaths are reported from Jhansi district alone 288 animals are reported to have died. It causes considerable losses amongst young stock, and in certain localities in which it recurs periodically. Cattle were vaccinated as a preventive measure. There is good reason to believe that much saving of stock could be effected if systematic vaccination could be carried out in those places where black-quarter appears annually, providing this could be done before the customary time for its appearance has arrived. At the present time this is impossible owing to the insufficient staff of district board veterinary assistants.

Anthrax.—Reports of this disease were received from 34 districts and 1580 animals perished. It is not easily diagnosed by laymen and consequently often confused with other diseases. Hence very little reliability can be placed on these figures. Notification of anthrax cases is always given to the American Consul.

Foot and-Mouth Disease.—This affection has been very widespread, and has appeared with varying intensity throughout these provinces, very few districts escaping. The reported losses from the disease were 1626, the mortality being chiefly confined to young stock or old decrepit animals. It causes much inconvenience to agriculturists, especially during the harvest or ploughing season. Cattle fairs and markets are responsible for much of the spread of the disease, and the appearance of one case in a village is often soon followed by general infection throughout the whole of the village cattle. This is to a great extent owing to the apathy and ignorance of the villagers themselves, who cannot be induced to realise the necessity of early treatment, segregation, etc. The veterinary assistants have been kept very busy throughout the year in attending and treating cases of this disease. Where funds were available medicines have been distributed free to owners of affected cattle. A special commission on foot-and-mouth disease from England to study the disease *in situ*, assistance has been rendered by this department during their enquiry and morbid material procured for them.

Other Contagious Diseases. One hundred and thirty two head of cattle are reported as having died from other contagious diseases, which include pleuro-pneumonia, tuberculosis, and contagious abortion.

Preventive Inoculation.—Protective inoculations, chiefly against rinderpest, have been carried out on a very large scale. Operations of this nature were undertaken in 892 outbreaks against 397 in the previous year, and 62,435 animals have been inoculated during the year under report. Subsequent enquiries attest that results have been highly satisfactory. Very little opposition is now encountered, the beneficial consequence of the practice gradually overcoming the prejudices of the people.

Other Diseases. The veterinary assistants visited 19,691 villages against 19,786 in the previous year, and treated 45,687 animals or other contagious diseases than those already reported on. Although from this it would seem that this particular branch of work continues satisfactory, still the opinion is held that when contagious disease is not prevailing, these men could be more usefully employed at dispensaries, if more were established at headquarters, than in touring about the country looking for isolated cases to treat.

Investigation of Disease. During the year under report specimens of blood, morbid tissues, intestinal and other parasites have been submitted to the new laboratory at headquarters by veterinary inspectors, assistants, and also from district authorities for bacteriological and pathological investigation and opinion. Animals affected with various obscure diseases have also been sent for investigation, but owing to lack of accommodation much useful material has had to be refused since there was no place to keep them in. Owing to the development of the department and the increasing interest shown by the public in its endeavours to mitigate animal disease, it has become necessary to devote more attention than formerly to that branch of work which includes research. Such diseases as kamri, barsati, akrah, dourine, pleuro-pneumonia of goats, fowl spirochætosis, malignant jaundice (piroplasmosis) of the dog, as they occur in India, all call for more accurate knowledge, and at such a place as it is proposed to establish, work in this direction could be carried out with much benefit. Sanction has now been accorded for the erection of a suitable building in Lucknow.

Cattle Poisoning. Cases of criminal cattle poisoning have been reported from six districts. These were

investigated and handed over to the police to deal with.

Veterinary Hospitals and Dispensaries. There are now 46 hospitals or dispensaries in working order in the province. Those large and well equipped institutions in the important cities and towns, with adequate accommodation for in-patients are classed as hospitals while the less important ones of limited accommodation come under the head of dispensaries.

It is satisfactory an encouraging to record that the total number of cases treated during the year at hospitals and dispensaries was: out-patients 43,106 and in-patients 4061, making a total of 47,167, an increase of 6775 on last year's return. Some districts have introduced the system of charging a small scale of fees to those owners who can afford to pay, whilst others are as yet averse to the procedure. Where the system has been adopted and carried out in a business-like way it has proved a successs, and has in no way affected the popularity of the hospitals. In Lucknow, the hospital has brought in an income of Rs. 2593 during the year, and has an average daily attendance of four new cases.

Breeding Operations. *Stud Bulls.* The provision of adequate bull power appears to be giving a considerable impetus to the cattle breeding industry which year by year is arousing greater interest in the minds of the public of the province. The endeavours of the Civil Veterinary Department have been directed towards the production of—

(*a*) Improved working bullocks for ploughs, wells, and general agricultura l purposes as well as for heavy draught work.

(*b*) A higher milk yielding class of cows.

For the latter purpose a further batch of 13 bulls of the Hissar breed was obtained from Government Cattle Farm, Hissar, this year, and issued where required.

The bull rearing farm at Kheri is now in working order and continues to progress satisfactorily. Arrangements are being made to clear all the jungle, and it is hoped within a few years to convert the whole 500 acres into first class grazing land. There is at present 268 head of young stock on the farm. As anticipated last year, it has been possible to issue 25 good young stud animals in 1912 which is much earlier than the original scheme provided for, and a further batch of 26 will be ready in May, and again during the cold weather of 1913.

As the Hissar Cattle Farm has now passed under the control of the Punjab Government, and since everything points to a still greater demand for the heavier breeds of bulls such as Hissar, Kosi, etc., for the western districts of this province, as well as for improvement in the breed of milch cattle, a scheme has been submitted for establishing another farm in the Muttra district for breeding suitable animals.

Horse and Pony Stallions. At the beginning of the year under report there were 56 stallons on the register, all being the property of the provincial government.

Six stallions were purchased by the department during the year, four were castrated and sold, as they were considered unfit for further stud purpose, one died from snake bite, thus leaving a balance of 57 at the end of the year. Forty-eight stallions were employed at stud.

The number of mares covered by these stallions has amounted to 2,759; an increase of 20 on the previous year's coverings.

It is satisfactory to note the decided improvement and promise shown by the young stock, progeny of these provincial stallions in many places. Some exceptionally good young stock was noticed at the Saharanpur fair. The Arabs "Bumblepuppy," "Sardar," "Copenhagen," and "Brigand," all of which are very popular with the breeders, have maintained their high standard and reputation as prime foal getters.

The functions of this department in so far as horse breeding is concerned, are confined to the improvement of the indigenous horse and pony for the general utility of the people in those tracts other than the four selected districts of Aligarh, Muzaffarnagar, Bulandshahr, and Meerut, and it is noticeable that these tracts which were primarily considered unsuitable for horse breeding are now proving themselves capable of producing an animal which may be confidently expected to further improve.

Donkey Stallions.—There appears to be still an increasing demand for the services of donkey stallions for mule breeding, but the limited number available renders it difficult to meet the demand. It has been found impossible to obtain donkey stallions suitable for the purpose in India, therefore it is essential to think about making some arrangements for importing them if the mule breeding industry is to be encouraged and sustained.

Sheep Breeding.—Operations have been started in this direction as was proposed last year with the object of ascertaining if there is any possibility of improving the quality and quantity of the wool of the Indian sheep. Experimental flocks have been formed and located at Aligarh, Moradabad, Bahraich, Kheri, Allahabad, Banda, Partabgarh, and Lucknow, and imported Merino rams introduced into the flocks. Already some 55 half-bred Merino lambs have been born, but as yet it is too early to give any opinion in the matter. For this experiment 12 Merino rams were purchased, and during the year there were four casualties.

Fairs and Shows.—Temporary veterinary dispensaries were opened in connection with the Etawah, Bulandshahr, Saharanpur, and Batesar fairs under charge of District Board or Municipal veterinary assistants. Interesting specimens of drugs, instruments, etc., dealing with treatment of agricultural stock were on view at the Etawah Exhibition, and demonstrations in inoculations and other methods were given.

Rupees 1401 were contributed towards prize awards, and this amount was distributed at Saharanpur, Bulandshahr, Banda, and Ballia fairs.

Subordinate Establishment.—During the year the subordinate staff has increased from 156 to 162, and the strength of the establishment as it stood on 31st March was as follows:—Veterinary inspectors 16, veterinary assistants employed by Districts Boards 118, by Municipalities 15, by the Society for the Prevention of Cruelty to Animals 1, and 12 belonging to the provincial or headquarters staff (including one at the Cawnpore Agricultural College). One veterinary assistant was dismissed by the District Board, Etawah, for falsifying inoculation returns, and another of Naini Tal District Board for perjury.

Although the staff has increased considerably since the re-organisation of the department in 1903, when there were three inspectors and 51 assistants, it is still far below the requirements. In 1907 it was considered that one veterinary assistant per tahsil was needed and should be employed, but even now provision for that number has not been reached. The Superintendent is of opinion that not less than two men per tahsil can ever successfully cope with the amount of work connected with the treatment and preservation of agricultural and other stock. District Boards, either from want of funds or because they fail to realise the urgency of providing veterinary help for the agriculturist whose welfare depends so largely on cattle, are still reluctant or adverse to make an increase in their veterinary staff. The Dehra Dun district comprising an area of 1193 square miles of very difficult country, with a cattle census of 248,679 and those cattle possessing a high degree of susceptibility to contagious disease, is naturally continually visited by outbreaks of cattle disease, yet up until February last the District Board maintained

but one veterinary assistant to deal not only with contagious disease but also to carry out the ordinary duties expected of a veterinary assistant, over that vast area.

The veterinary inspectors are doing useful work and have been busily employed during the year in checking the work of veterinary assistants, conducting inoculation campaigns and other measures to suppress outbreaks, in inspecting and in supervising. The provincial staff of veterinary assistants has done good work in relieving District Board veterinary assistants proceeding on leave and in rendering assistance in treatment of cattle disease and inoculation in cases where the local staff has been inadequate. They also help considerably in making special investigations and enquiries regarding diseases, and some have been able to render good service connected with horse and cattle breeding operations, and in the laboratory. It is found that as a rule the work of these provincial men is of a more efficient and thorough character than that done by those men employed by District Boards under whose orders they are. It is obviously impossible for a District Board to efficiently control officers carrying out work of a technical nature such as this, and hence their veterinary assistants can easily evade duties which they would otherwise find difficult if placed more directly under the control and orders of the Superintendents of the Civil Veterinary Department.

Expenditure.—The cost of the department according to the statement furnished by the Accountant-General, shows a decrease, viz., Rs. 82,724 this year against Rs. 93,938 expended last year.

C. W. WILSON, M.R.C.V.S.,
Officiating Superintendent, C.V.D, United Provinces.

Cruelty to Lambs—Rickets. Dismissed.

At Mistley on Monday, September 1st, before Dr. W. H. Slimon, and other Magistrates, John Bird, farmer, of Ardleigh and Lexden, was summoned for causing unnecessary suffering to four lambs at Ardleigh, between 1st and 18th August.

Inspector Patrick Dooner, R.S.P.C.A., said he accompanied P.C. Link to a field belonging to the defendant, where he saw four lambs in a very emaciated condition, and all lame. One animal had the use of the front legs only, and showed signs of having been dragged along for some considerable distance. Another animal could only walk a little. There were no signs of food or water having been given the animals.

William Norfolk, a shepherd employed by the defendant, who appeared on subpœna, stated that one of the lambs had never been able to stand on its legs. If the animal had been his he should have long since destroyed it.

In reply to the defendant, witness said he had never known him to be cruel to any animal, and he had always supplied more than enough food.

Mr. Walter George Green, M.R.C.V.S., Colchester, testified to examining four lambs which were about four months old. One was completely paralysed, and was dragging its hind on the ground. There were abrasions of both knees through having to crawl. The second lamb was lame, and the off fore-leg was very much deformed. There were abrasions on the knees of both hind legs. The third lamb was suffering from bony enlargement of both knees. The fourth, although lame, was not so bad, but like the others it was suffering from rickets. The legs of one of the lambs were twisted like chair legs.

Defendant called his son, Horace Charles Bird, farmer, of Ardleigh, who said the condition of the animals was caused through over-feeding. Both he and his father were always kind to animals.

The shepherd, recalled, said that, acting on instructions of the Inspector, he killed two lambs. He gave the carcase of one of the animals to the dogs, and that of the other to his neighbour for human food. (Laughter.)

Defendant said he had seen dozens of ricketty lambs at lamb sales and markets, and he did not think it was cruelty to keep them.

The Chairman said the Bench were equally divided as to whether the defendant were guilty or not, and the case would therefore be dismissed. He added that he had all his life dealt with cases of rickets, and he knew that to leave lambs in a field to feed by themselves would be cruelty.—*East Anglian Daily Times.*

New Abattoir for Belfast.

The splendid abattoir opened just now is the finest and best equipped establishment of its kind in Ireland, and if Glasgow and Edinburgh did not block the way, we should say of the United Kingdom. There is lairage accomodation for 300 cattle, 1000 sheep, and 200 pigs. The railway facilities are of the best; live stock are brought alongside, and the Board of Agriculture have provided sidings where the inspection before slaughter can be made instead of at the different railway stations, as was previously the case. From a practical, as well as a humane, point of view, this is a most desirable arrangement.

The slaughtering accommodation for all classes of stock is ample, complete, and up-to-date in every detail. The buildings are lighted throughout by electricity, each one has its electric clock, and all are in touch with the inspector's-room by means of the telephone. The abattoir covers a space of three and a half acres, and there is plenty of room for expansion.

The offices of Mr. J. A. Jordan, the well-known City Veterinarian and Superintendent of Abattoirs, and his staff, situate at the main entrance, are ideal for their purpose. Meat inspection in Belfast has no dread for the butcher; he has learned by experience that in the very practical hands of Mr. Jordan his interests are not overlooked. Nothing is condemned merely to pander to a fad, the consequence being that our Ulster friends are immune from many of the harassing and vexatious seizures of which we too often hear elsewhere.—*Meat Trades' Journal.*

The Cost of Foot-and-Mouth in Ireland.

The report of the Department of Agriculture and Technical Instruction for Ireland on proceedings under the Diseases of Animals Acts for 1912 has been issued. It deals with the outbreaks of foot-and-mouth disease in 1912, of which there were sixty-eight cases among cattle, one among sheep, and two among swine. The disease had not been previously known in Ireland for twenty-eight years. The total number of animals slaughtered during the operations against the disease, including both infected animals and those in contact therewith or otherwise exposed to infection, was 3592, of which 1928 were cattle, 1533 sheep, 100 pigs, and 31 goats. The aggregate amount paid as compensation for the stock so slaughtered was £28,030 13s. Owing to the restrictions adopted for the suppression of the disease, the exports of cattle, sheep, and swine fell to an unusually low level, the total for 1912 being 1,439,538, as compared with 1,695,039 in 1911. The falling off was, however, almost entirely in classes other than fat cattle, the fat cattle shipments being some 67,000 head in excess of those for 1912.—*N.B.A.*

Cattle Hides Injured by Ticks.*

According to figures gathered by one of the veterinary inspectors of the Bureau of Animal Industry, the presence of the tick among the cattle of the south not only lessons the value of the cattle on the hoof, but causes the hides that have been infested with ticks to be graded No. 4 quality.

The same hides, if free from tick marks, would grade No. 2. The difference in price between these two grades is 3 cents per pound. As the hide of southern steers weighs about 42 pounds, the presence of the tick in the hide causes a loss in the hide alone more than 1.26 dols. (say 5s.) per hide. Government specialists point out that the cost of tick eradication is only about 50 cents per head, so that if the counties make a systematic campaign to eradicate the tick, the increase in value of the hide alone would pay for the cost of tick eradication and leave the farmer a net profit of about 76 cents (3s.) per hide.

A prominent tanner in Pennsylvania states:—"For the class of leather we make we prefer southern hides for chrome, on account of the close texture and fine grain, but on account of the ticks we have had to practically stop purchasing southern hides."

A large percentage of the chrome leather now produced is finished with the grain left on so that all imperfections and tick marks on the grain side show very plainly. In the old days when all the leather for uppers was made from bark-tanned stock, all leather was buffed and the grain was removed, and tanners could use cheap hides that were covered with imperfections and tick marks, and make fairly good leather. The situation today is very different, as the public is demanding more and more grained leathers for which large proportions of southern hides will not be available until the tick is eradicated.

Tennessee will probably be the first State to be entirely free from quarantine for ticks. It already has eradicated the tick in fifty-one counties, and it is hoped that by September 1st the remaining eight counties will be free from ticks and the entire State out of quarantine.

According to the specialists of the Department of Agriculture, it has cost less than 50 cents per head to eradicate the tick in Tennessee, and the cattle owners as a result have gained not less than 7 dols. per head of their stock, so that the investment paid for itself nearly 14 times over in a very short time. This does not include the additional profits which come from the fact that now that the tick is eradicated more cattle can be raised on each farm and the consequent increase of the amount of fertilizer available.

* Office of Information, U.S. Department of Agriculture.

Holstein Bulls for Dairy Herds.

Several of the large dairy farmers in Cheshire are purchasing Holstein bulls for the improvement of the milking qualities of their Shorthorn herds. Mr. W. Carter, Broad Lane, Nantwich, one of the Cheshire County Council small-holders, has a herd of sixteen of these cattle. Recently one of his cows gave 88½lb., or nearly 9 gallons of milk, in one day. The average yield of Holstein cattle is from 5 to 6 gallons per day. At the South Cheshire Show Mr. Carter showed two of his British Holstein cattle. One of them, Hedges Burnie, won the special prize offered by Messrs. Henry Manley and Sons for the best dairy cow in the show. The same animal also won the second prize in a strong class against all Shorthorns. The other animal, Willow Crewna, a two-year-old heifer, was awarded third, also in a good class of Shorthorns.—*L. S. J.*

Personal.

HIGH COMMISSIONER'S NOTICE No. 66 OF 1912.

It is hereby notified for general information that His Excellency the High Commissioner has been pleased to appoint WILLIAM ALEXANDER ELDER, Esq., M.R.C.V.S., Veterinary Officer to the Swaziland Administration, to be a Justice of the Peace for the Territory of Swaziland.

By command of H.E. the High Commissioner.

C. H. RODWELL, Imperial Secretary.

Pretoria, Nov. 11, 1912.

Mr. W. GRAHAM GILLAM, M.R.C.V.S., of Prince Albert, late of Minehead, Somerset, was one of the judges at the Agricultural Shows at Melfort and Prince Albert, in the Province of Saskatchewan.

Mr R. M. MALLOCH, M.R.C.V.S., Kirkby Stephen, has been appointed foreman of the jury in the enquiry on the Aisgill railway disaster.

COMPULSORY NOTIFICATION.

Sir,

I have read your Editorial of the 13th inst. with interest in regard to what transpired at the Midland Counties V.M.A. I feel sure that the points mentioned are not the real cause of many veterinary surgeons feeling aggrieved at the working of the Tuberculous Order. What I, and others to whom I have mentioned the matter, object to, is, that when you have reported, another V.S., often quite a young man, comes into your district, sometimes parading his authority and in other ways "showing off." I am not ashamed to say that I do strongly object to this for reasons any practitioner can understand. Is it fair that an outsider should come right among my clients, even to within a mile of my residence, to carry out the terms of this Order?

I do think every V.S. ought to have the inspection of a certain radius round his own district, which would save much friction and also unnecessary expense. Fancy sending a man about 18 miles to a farm which is within a mile of my house, to apply the tuberculin test!

Of course, sir, I know I am bound to report cases coming under my notice, and should never think of doing otherwise, but I do say it is placing one in an invidious position. I suggest that all veterinary surgeons not inspectors should memorialise the Board of Agriculture to represent to the various County Councils this *real grievance* under which the private practitioner at present is labouring. It is admitted that this Order is to be a great help to the veterinary profession, so why not have a more equitable arrangement which will allow wider distribution of the fruits? My candid opinion is that the practitioner who is not also a veterinary inspector is going to have to submit to many indignities, and have his practice much curtailed.

With your permission, sir, I should be glad to hear if these suggestions of mine are favourably received, when arrangements could be made to bring the matter before the proper authorities at an early date.—Faithfully yours,

C.

A CAUSE OF "EMACIATION."

Sir,

When the Tuberculosis Order came into force in May last, a deal of judgment was required to discriminate between poorness and emaciation. The former arising from the poor quality of the hay upon which the cattle were fed during the previous winter, and the latter being the result of disease, probably tuberculosis. I would now point out that another factor has arisen, which may make it difficult to arrive at a correct diagnosis. I allude to the presence of the Distoma Hepaticum, which as is well known to the older practitioner, causes extreme emaciation of the host. I came across a case under the Order yesterday, but fortunately for me the beast was affected with tuberculosis also.—Yours faithfully,

Swindon. Sept. 17. J. C. COLEMAN.